Saskatchewan
Health

Annual Report 1978-79

Saskatchewan Health

Hearing Aid Plan

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Saskatchewan

Health

Hearing Aid Plan

3475 Albert Street
Regina, Canada
S4S 6X6

Annual Report
April 1, 1978 to
March 31, 1979

Saskatchewan

Minister of Health

Legislative Building
Regina, Canada
S4S 0B3

To the Honourable C. Irwin McIntosh
Lieutenant Governor of Saskatchewan.

MAY IT PLEASE YOUR HONOUR:

I am pleased to submit the annual report of the Saskatchewan Hearing Aid Plan for the year ended March 31, 1979.

Respectfully submitted,

Herman H. Rolfes

Herman H. Rolfes

Saskatchewan

Saskatchewan Health — Deputy Minister

3475 Albert Street
Regina, Canada
S4S 6X6

To the Honourable Herman H. Rolfes
Minister of Health

Sir:

I am pleased to submit the annual report of the Saskatchewan Hearing Aid Plan for the year ended March 31, 1979.

Respectfully submitted,

K.J. Pyke
Deputy Minister of Health

Saskatchewan Health
Hearing Aid Plan

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I. Highlights for 1978-79

* 9,631 patients (an increase of 1,114 (13%) over 1977-78) received services from S.H.A.P. Of these, 54.5% were 65 years of age or over and 19.3% were 19 years of age or under.

* 21,183 individual services (an increase of 2,791 (15.2%) from 1977-78) were provided, with an average of 2.2 services per patient.

* The major portion of S.H.A.P.'s clientele continues to be the elderly. Persons 65 years of age and over purchased 66.3% of the aids sold.

* 6,126 audiological evaluations were performed (an increase of 520 (9.3%) over 1977-78) and 35.1% of these resulted in the fitting of hearing aids.

* The average cost of an audiological evaluation was $67.60.

* The average cost of a hearing aid evaluation and follow-up was $135.21.

* The average cost of a complete audiological evaluation, hearing aid fitting and follow-up was $202.81.

* The average cost of a hearing aid to a patient was $118.82, an increase of $12.26 (11.5%) over 1977-78.

* 68.0% of the patients seen by S.H.A.P. were from outside the cities of Saskatoon and Regina.

* A total of 8,469 repairs and minor services were provided during the fiscal year 1978-79. These are as follows: 1,037 (12.3%) major repairs (complete reconditioning, replacing microphones etc.) at an average charge to the patient of $26.60; 2,172 (25.6%) minor repairs (soldering wires, recasing, etc.) made by S.H.A.P. staff at no charge to the patient; 5,260 (62.1%) minor services (earmolds, tubing, adjustments, etc.).

* Staff shortages during the year due to difficulties in the recruitment of professional staff resulted in the loss of approximately 11 man months.

* 44 auditory trainers are in use by pre-school hearing impaired children. These were purchased in co-operation with the B.P.O. Elks Purple Cross Deaf Detection and Development Program.

* All nursing homes in the province which have requested service have been visited by S.H.A.P. audiologists and technicians and are seen on a continual review basis.

* Recruitment and training of a Hearing Aid Repairman was completed during the year. The repair department will be in full operation April 1, 1979.

* The Saskatoon Clinic moved to the new Sturdy-Stone Centre during the month of December 1978.

* Renovations to the Regina Clinic facilities were completed during the 1978-79 fiscal year.

* The 1978-79 fiscal year saw the implementation of a revised computer-based statistical retrieval system.

II. Answers to Frequently Asked Questions

Q. Who is seen by S.H.A.P.?
A. S.H.A.P. has the expertise and facilities to evaluate the hearing of the very young (minimum — 2 months of age) to the very old.

Q. How do I arrange to see S.H.A.P.?
A. By contacting either of S.H.A.P.'s main clinics. One is located in Saskatoon and one in Regina. In addition, clinics are held in each health region every month. Call the regional health office for an appointment.

Q. Is a referral necessary?
A. No referral is required, simply contact the nearest permanent clinic, or the regional health office in your area.

Q. How will I know if I need a hearing aid?
A. A number of hearing tests will be performed by a qualified audiologist who will determine the extent of your hearing loss and the effect of the loss on your communicative abilities. If there is any question of the need for medical intervention, referral to a physician will be required before a hearing aid is fitted.

Q. What kind of hearing aid will S.H.A.P. provide?
A. There are four basic hearing aid models. These are the behind the ear, the eye-glass, body and the all-in-the-ear models. The patient's need and hearing loss will dictate the choice of aid. S.H.A.P. maintains an inventory of all models which are purchased from major manufacturers all over the world.

Q. How long will it take to receive my hearing aid?
A. If after a hearing evaluation it is determined a hearing aid will assist you, an earmold impression is taken and sent to the laboratory to have a custom made earmold made for your ear. This takes about three weeks, at which time a hearing aid evaluation is scheduled. In the regional clinics, the fitting of the hearing aid is completed at the next regular monthly clinic.

Q. What will a hearing aid do for my hearing loss?
A. A hearing aid is a miniature amplifier. It has the function of making sounds louder although not necessarily clearer. Because of its ability to respond better to some pitches than others, the hearing aid can help compensate for a hearing loss at specific pitches or frequencies. The end result is an improvement in the ability to hear sounds in the environment and the sounds of speech. A hearing aid will not restore hearing to "normal".

Q. What does S.H.A.P. charge for its services?
A. S.H.A.P. provides testing and fitting of hearing aids at no cost to residents holding a valid Saskatchewan Health Services Card. Clients incur the cost of the hearing aid, an ear mold, batteries and other accessories that may be required.

Q. How much will the aid, ear mold and batteries cost?
A. The price of an aid varies. S.H.A.P. sells the aid at government cost. During the year the average cost of an aid was about $118. An ear mold costs about $6.00 and batteries vary depending on size and quantity.

Q. Do I have to buy a hearing aid?
A. No. S.H.A.P. staff will recommend a certain aid for your needs, but only if you will benefit from it. The final decision is yours.

Q. Suppose I don't have all the money at once?
A. S.H.A.P. has an interest free instalment plan. A nominal one time charge is levied to cover bookkeeping costs.

Q. Suppose I change my mind or don't like the aid I bought?
A. S.H.A.P. has a 60 day money back guarantee. If during that period the patient is not satisfied, the cost of the hearing aid will be refunded in full.

Q. What if I have a problem with my new aid?
A. S.H.A.P. guarantees its aids for one full year. If the aid breaks after one year, S.H.A.P. has complete repair facilities. Minor repairs are completed without cost. If the aid requires major repairs it will be repaired by a qualified S.H.A.P. repairman. The patient will be charged for all major repairs. Loaner hearing aids are available at no charge while repairs are being completed. If the problem is in adjusting to wearing the hearing aid, S.H.A.P. can also help. S.H.A.P. has sold thousands of aids to Saskatchewan residents and is aware of the difficulty some people have adjusting to a new hearing aid. S.H.A.P.'s expertise is helpful in overcoming a person's fears concerning hearing problems or hearing aids.

III. Organization & Administration

A. **Legislative Authority**

The Saskatchewan Hearing Aid Plan was inaugurated on August 15, 1973, under authority of The Hearing Aid Act.

B. **Objectives of S.H.A.P.**

The Saskatchewan Hearing Aid Plan was implemented to:

1. Provide high quality hearing aids to residents at greatly reduced costs.

   By arranging purchases of large quantities of hearing aids from major manufacturers and distributors on yearly contracts, S.H.A.P. is able to keep the purchase cost of a hearing aid at a minimum.

2. Provide audiological services by qualified professionals.

   Only audiologists with a master's degree are employed by S.H.A.P. The audiologists are assisted by audiometric technicians in the fitting of hearing aids.

3. Ensure necessary follow-up services are provided. This includes periodic monitoring, counselling sessions, and making adjustments to hearing aids when necessary.

4. Provide hearing aid repair service for S.H.A.P. supplied aids and others.

   S.H.A.P. staff perform minor repairs to aids at no cost to the patient. For major repairs, the aid is sent to S.H.A.P.'s own repair department or the manufacturer of the aid. Loaner hearing aids are provided by S.H.A.P. until the patient's aid is returned.

5. Provide special equipment to hearing impaired pre-school children. S.H.A.P. assists in the provision of auditory trainers to hearing impaired pre-school children requiring this specialized equipment.

C. **Organizational Overview**

S.H.A.P. is one of the programs of the Community Health Services Branch of Saskatchewan Health.

An Advisory Board was established by the Minister of Health to provide input concerning the operation and services available through the Plan. Members of the Board are selected from various groups representing organizations or agencies that directly or indirectly require S.H.A.P.'s services. Appointments are for a two year period with concurrent terms possible upon the recommendation of the nominating agency.

The board consists of:

Two representatives from the Saskatchewan Medical Association: one from the northern part and one from the southern part of the province —
Dr. E. V. C. Dwersteg
Dr. R. Crook

Two representatives from the field of education: one from the Department of Education and one practicing teacher of the deaf and hard of hearing —
Vacant
Miss J. Dean

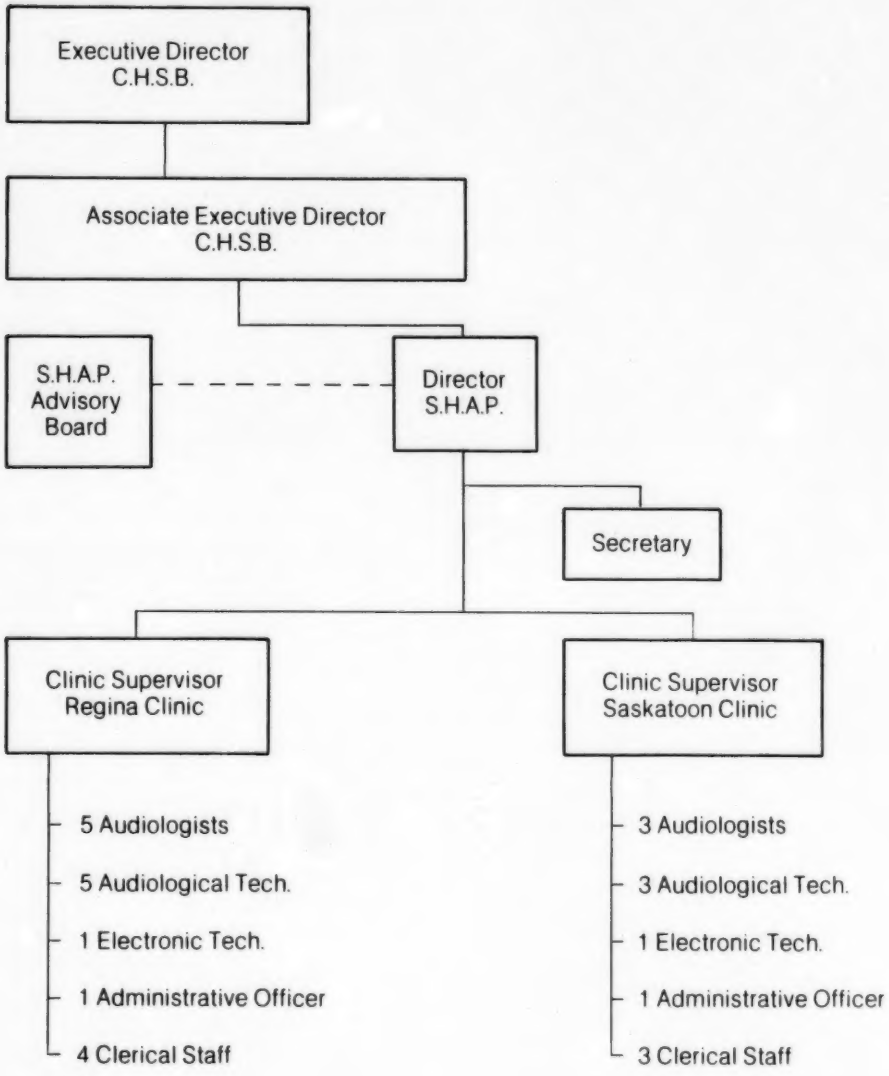
One representative from the Saskatchewan Speech and Hearing Association —
Mrs. K. Pederson

Two consumer representatives appointed by the Minister of Health —
Mr. D. Vansickle
Mr. D. Sullivan

Several observers, including a public health nursing representative and the two clinic supervisors, attend board meetings which are usually held twice yearly. The Director of S.H.A.P. acts as Chairman of the Advisory Board.

D. **Organization Chart**

Saskatchewan Hearing Aid Plan



March 31, 1979

– – – – Advisory Relationship

E. **Personnel**

At the termination of the 1978-79 fiscal year, S.H.A.P.'s staff totalled thirty-two. This number includes the director, two clinic supervisors, eight audiologists, eight audiometric technicians, two electronic technicians, one hearing aid repairman, two administrative officers and a clerical staff of eight.

The appointment of S.H.A.P. personnel is made by the Public Service Commission and employees are subject to regulations governing the provincial civil service.

F. **Facilities and Equipment**

Regina Clinic

The Regina Clinic is located on the ninth floor of the McCallum Hill Building at 1874 Scarth Street. Renovations to the facilities were completed during the 1978-79 fiscal year.

At present the clinic has an adequate array of diagnostic equipment including sound treated booths, audiometers, electro acoustic impedance bridges, tape recorders, tape cassette players, phonographs and other electronic equipment. This diagnostic equipment enables S.H.A.P. audiologists and technicians to measure hearing acuity for various sounds and speech. The electro acoustic impedance bridge provides an objective means of measuring middle ear functioning. This procedure is particularly important in the testing of children and difficult to test patients.

Besides diagnostic equipment, the clinic maintains space and equipment for the fitting of hearing aids; electronic testing and maintenance of hearing aids and diagnostic equipment; and repair of hearing aids, The electronics and repair areas are fully equipped with highly specialized instruments to calibrate and monitor hearing aids and audiometric equipment. Calibration and repair services are made available to other health professionals upon request.

Saskatoon Clinic

The Saskatoon Clinic moved from the Investors Building during the month of December 1978. Now located on the 2nd floor of the Sturdy Stone Building at 122-3rd Avenue North, it has extensive diagnostic facilities, equipment and hearing aid fitting areas similar to those in the Regina Clinic.

Regional Clinics

To service the widely dispersed population of Saskatchewan, S.H.A.P. conducts regular clinics in each health region. Permanent facilities are available in each of the ten health regions. Each regional clinic has a sound treated booth, audiometer, electro acoustic impedance bridge, tape cassette recorder, and space and equipment for the fitting of hearing aids.

Department of Northern Saskatchewan (DNS)

Regular audiological clinics are scheduled, as determined by DNS, during the winter months in various centres in the northern half of the province.

Nursing Homes

Nursing homes are visited on a regular basis or when the need arises. In order to serve these facilities, portable equipment is used. A portable audiometer, impedance bridge and a tape cassette player are used by the audiologist to test the hearing of nursing home residents. A technician fits the hearing aid and provides the necessary counselling. A subsequent follow-up visit is arranged by the technician to assess the resident's performance with the new hearing aid.

Figure 1
Location of
Saskatchewan Hearing Aid Plan Clinics

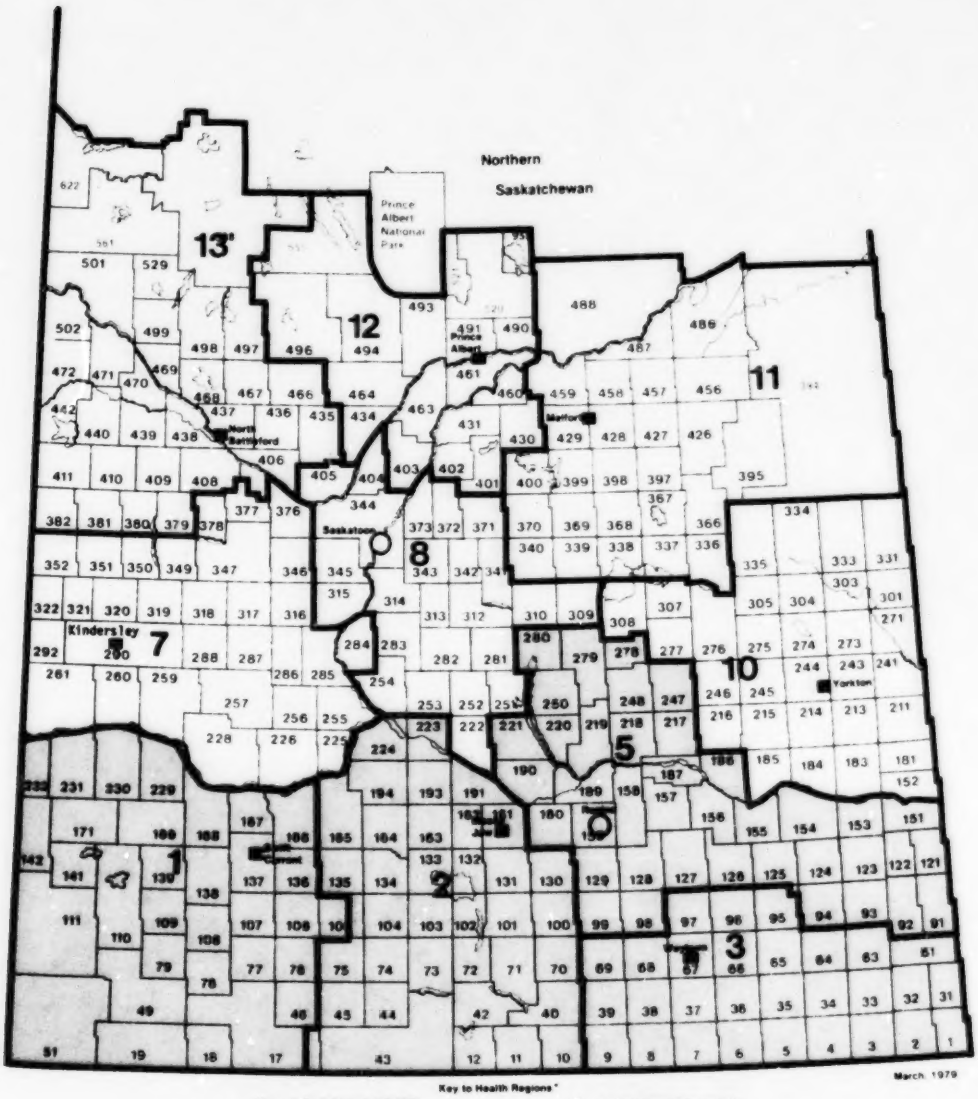


Figure 1: SHAP Audiology Clinics in Saskatchewan
O base clinic
regional clinic

Clinics are conducted in Northern Saskatchewan when and where needed.

IV. Program Activities

A. Eligibility and Benefits

To be eligible for benefits a beneficiary must be a resident of Saskatchewan holding a valid Saskatchewan Health Services Card. Some residents are not required to hold a Saskatchewan Health Services Card and still may receive benefits. For example, members of the R.C.M.P. and members of the Armed Forces, who are stationed in the province are covered under the Federal Health Plan, which is charged for services provided.

There is no charge to Saskatchewan patients for audiological tests received. Hearing aids recommended by the audiologists are sold at cost price. All hearing aids sold are guaranteed for one full year from the date of purchase. This guarantee covers any repairs due to defects in manufacturing. In addition a patient can obtain a refund, for any reason, provided the hearing aid is returned within 60 days from the date of purchase. A credit plan is offered for any purchase in excess of $30.

The Plan also provides minor repair service free of charge and major repair service at cost. This service is available to all patients regardless of where the hearing aid was purchased. "Loaner" aids are available at no charge while aids are being repaired.

Accessories such as cords, receivers and ear molds are sold at cost. Prior to February 1, 1975, hearing aid batteries were available at cost price, but only through the S.H.A.P. Clinics. As a result of numerous requests from hearing aid users to have batteries made available locally, the Plan made arrangements with some pharmacies to handle hearing aid batteries at considerably reduced prices. On March 31, 1979, 115 pharmacies (mainly in rural areas) were participating in this arrangement.

During the fiscal year, in co-operation with B.P.O. Elks Purple Cross Deaf Detection and Development Program and their auxiliary, The Order of the Royal Purple, S.H.A.P. continued to supply auditory trainers to hearing impaired pre-school children as the need was identified.

Auditory trainers are specialized systems of amplification that allow wireless communication, by means of radio frequencies between the parent and the hard-of-hearing child, over a much wider range than available with conventional hearing aids. Such equipment is extremely expensive and without programs such as this, auditory trainers would be inaccessible to the average family. This equipment is essential to the pre-school hearing impaired child if he is to develop speech and language to the optimum of his ability.

B. Nature and Scope of Services

The services offered by the Plan incorporate audiological evaluations, selection and fitting of hearing aids and follow-up of beneficiaries with a hearing impairment. The Plan co-operates with other agencies in providing services to the hearing impaired in the province.

A patient may be self referred or referred by a general practitioner, an otologist, a public health nurse or other agencies. Each patient undergoes a thorough audiological evaluation consisting of pure-tone testing, speech audiometry, impedance testing and other special testing as determined by the audiologist. All cases with medical problems are referred to the family physician or to an otologist. Patients under eighteen years of age require medical approval before being fitted with a hearing aid.

On the basis of the audiological evaluation, a hearing aid evaluation may be recommended in order to select the most suitable aid. Extensive counselling is provided to the patient by the audiologist and technician in the use, care and maintenance of the aid. Experience elsewhere has shown that many aids dispensed are either not worn at all or are inappropriately worn. Because of this observation, regular follow-up counselling sessions have been established.

During the year, 29 different models of hearing aids were available from 5 major manufacturers offering a wide range of features. However, 12 models constituted 72% of sales by volume. The Plan has available an extensive variety of hearing aids to provide the most appropriate hearing aid for the various types of hearing loss, and to satisfy individual consumer preference; aids not carried as a stock item can be ordered if required. This greatly increases the number of models S.H.A.P. makes available to the residents of the province.

Hearing aids are obtained from both Canadian and foreign companies. These companies are invited to tender according to requirements developed by the Plan.

Each aid has to be accompanied by a performance data sheet from the manufacturer. Spot checks are conducted by the Plan's electronic technicians on the performance of a sample of each consignment to ensure maintenance of quality. In addition, each aid is tested for performance when it is dispensed.

V. Program Statistics

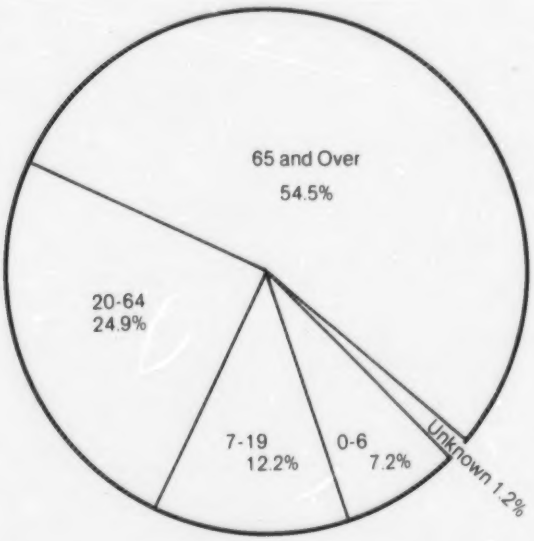
A. **Patient Characteristics**

Age Distribution

In 1978-79, 9,631 patients were seen for a variety of services. Of these, the major portion receiving services were 65 years of age or over. In view of the high correlation between advanced age and hearing loss, it is not unusual that those over 65 years of age made up 54.5% of the total patients seen by S.H.A.P.

Figure 2

Age Distribution of S.H.A.P. Patients



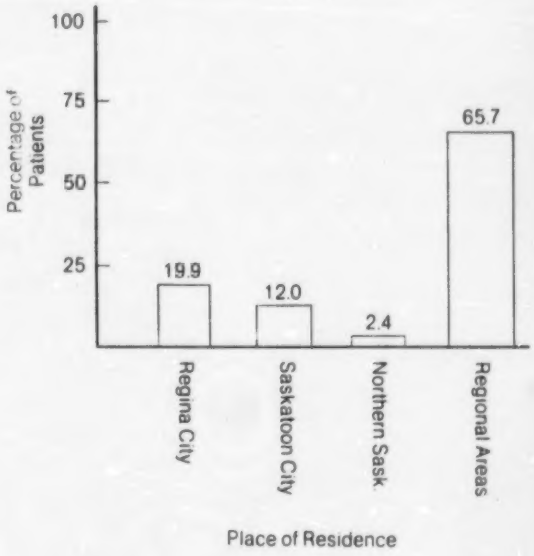
The actual number of people seen in each category is as follows:

0 - 6	691	(7.2%)
7 - 19	1,171	(12.2%)
20 - 64	2,401	(24.9%)
65 and over	5,253	(54.5%)
age not given	115	(1.2%)

S.H.A.P. stresses provision of services to all residents of Saskatchewan and attempts to provide services throughout the province, not only in the main population centres of Regina and Saskatoon. As can be seen from Figure 3, the vast majority of S.H.A.P. patients (68%) reside in areas of the province other than Regina or Saskatoon.

Figure 3

Patients Seen by Region of Residence



A more precise breakdown of total patients seen by region of residence and age is found in Table 1 on page 15.

As of June 30, 1978, 159,260 people lived in Regina or 16.4% of the total population and 141,167 or 14.5% lived in Saskatoon.*

Services Provided

For the purpose of analysis, S.H.A.P.'s services are divided into five main categories. These categories are Audiological Evaluation, Hearing Aid Evaluation, Repairs and Minor Services, Counselling and Loan Aid services.

The 9,631 patients seen at S.H.A.P. clinics were provided with 21,183 individual services. The majority of our patients are seen more than once. First time hearing aid users often require several visits for counselling and hearing aid adjustments, while very young patients may require two or three visits in order to accurately establish hearing thresholds. Figure 4 shows how these five services were distributed.

*Saskatchewan Hospital Services Plan Covered Population June 30, 1978

Figure 4
Distribution of Types of Services

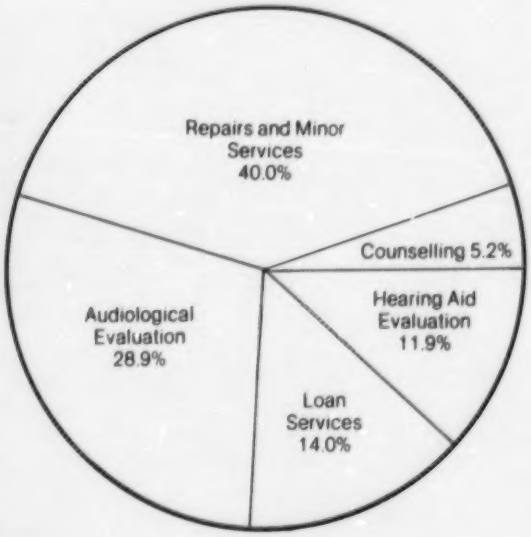
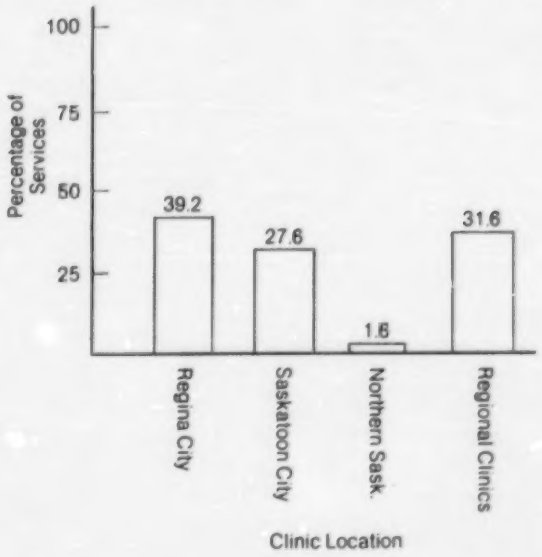


Figure 5
Services Provided by Clinic



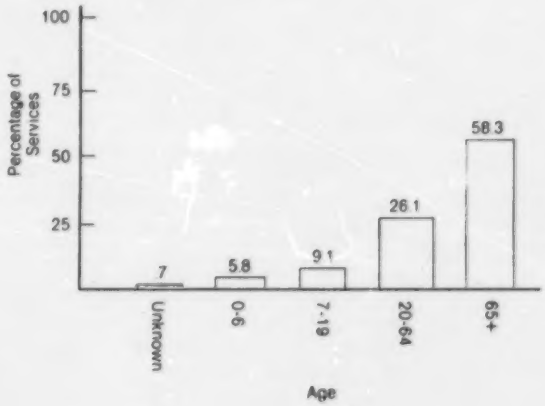
These percentages reflect the following individual services: audiological evaluations 6,126; hearing aid evaluations 2,516; major repairs and minor services 8,469; counselling services 1,095; and loan services 2,977*; for a total of 21,183 services provided.

*Includes both issued and returned loaner aids.

Referring to Figure 4, it is apparent that repairs constitute a sizeable portion of S.H.A.P.'s services. The 8,469 repairs and minor services are made up of a variety of services. Minor services include a number of functions, from retubing or venting the earmold to changing the gain or tone adjustments on the hearing aid. Major repairs are now routinely handled by the S.H.A.P. repairman; only in special cases are hearing aids sent back to the factory repair depot. Usually an appropriate loaner hearing aid is given to the patient while a hearing aid is being repaired. A total of 1,489 hearing aids were loaned in 1978-79.

Although Figure 3 on page 9 indicates that 68% of our services are provided to residents of rural areas, Figure 5 shows that the two main clinics in Regina and Saskatoon provided 66.8% of the total services. This is not unexpected since rural residents travel to the larger centres to obtain not only S.H.A.P. services but other services as well. A more precise breakdown of total services provided by age is found in Table 4 on page 16.

Figure 6
Services Provided by Age



The actual number of services provided in each age group is as follows:

0 - 6	1,220	(5.8%)
7 - 19	1,938	(9.1%)
20 - 64	5,533	(26.1%)
65 and over	12,345	(58.3%)
unknown	147	(0.7%)

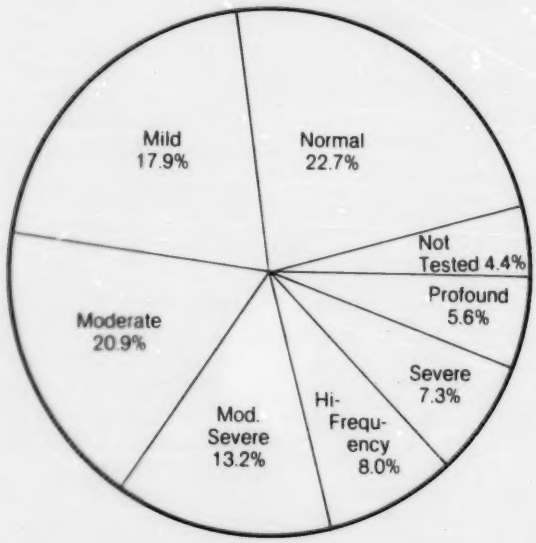
Table 2 on page 15 indicates in detail the distribution of services by age and region of residence.

Table 3 on page 16 indicates the services rendered by age of patient and type of service.

Hearing Problems

To simplify the analysis of the problems found, a hearing problem was defined as an ear that is not "normal". As a result, a large number of people were considered as having two problems, since hearing was impaired in both ears. During 1978-79, 12,252 problems were found. Figure 7 shows the relative severity of these losses, while Figure 8 shows the type of impairment (see the glossary for definition of terms on page 19).

Figure 7
Hearing Losses Found, by Degree of Loss

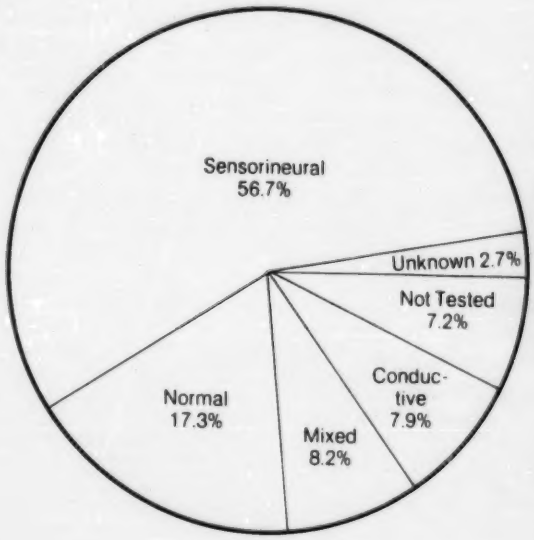


*normal	2,777	(22.7%)
hi-frequency	979	(8.0%)
mild	2,195	(17.9%)
moderate	2,554	(20.9%)
moderately severe	1,623	(13.2%)
severe	900	(7.3%)
profound	685	(5.6%)
**not tested	539	(4.4%)

* Because by definition the category of normal hearing is from 0-25 dB HL (Hearing Level) on the audiogram, it is possible to have hearing within normal limits along with a small conductive, mixed, or sensorineural overlay.

** The non-tested category included a number of ears that could not be tested for a variety of reasons.

Figure 8
Hearing Loss Found, by Type of Loss



normal	2,116	(17.3%)
conductive	973	(7.9%)
mixed	1,006	(8.2%)
sensorineural	6,949	(56.7%)
unknown	325	(2.7%)
not tested	883	(7.2%)

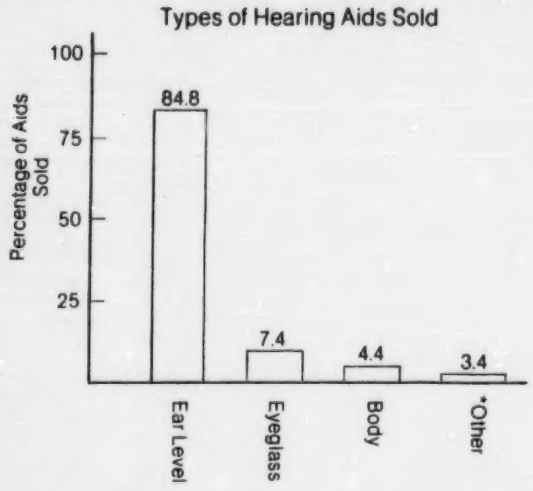
Again, as in previous years, the majority of people tested had a sensorineural hearing loss. This corresponds with the number of geriatric patients seen among whom this type of hearing loss predominates.

Table 5 on page 17 shows in greater detail hearing problems found by degree and type of loss.

Aids Sold

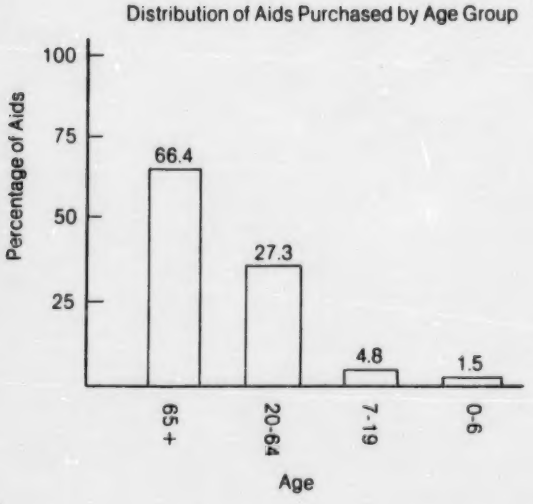
As in previous years, the majority of hearing aids sold were of the behind-the-ear variety. Figure 9 shows that 84.8% of the gross number of hearing aids sold were of this type. This figure has steadily increased from 69.1% in 1973 to 84.8% in 1978-79.

Figure 9



*3.4% of total number of hearing aids sold included all-in-the-ear, bone conduction, special order hearing aids.

Figure 10



As in past years, patients 65 years of age and over accounted for the major portion of aids purchased. Figure 10 shows the distribution of aids sold by age.

A more detailed presentation of statistics dealing with hearing aids is found in tables 6, 7 and 8 on pages 17 and 18 in Section D, Statistical Tables.

B. **Cost of Services**

Financial Aspects of the Program

This section summarizes the cost of testing individuals, fitting an aid and providing the necessary follow-up. A detailed description of the method used is presented in the Financial Statements on pages 13 and 14.

Of S.H.A.P.'s overhead of $754,347, $414,154 or 54.9% was attributed to providing audiological evaluations whether or not a hearing aid was recommended or sold. The $414,154 was distributed over 6,126 evaluations for an average cost of $67.60 per audiological evaluation. This is an increase of $11.06 (19.5%) over the 1977-78 figure of $56.54.

The fitting of hearing aids which includes hearing aid evaluation, counselling and follow-up care accounts for 45.1% of S.H.A.P.'s time. Of the overhead of $754,347, $340,193 or 45.1% is attributed to these services when a hearing aid is purchased. Thus the 2,516 hearing aid evaluations, which included evaluating various aids, counselling and follow-up care, averaged $135.21 each. This is an increase of $22.12 (19.5%) over last year's average cost of $113.09 per hearing aid evaluation.

Hearing aid sales of $255,576 were reported during the year. The 2,151 net aids were sold for an average price of $118.82 each, which is an increase of $12.26 per aid (11.5%) over the previous year.

The total cost of fitting a hearing aid in 1978-79 was $202.81 plus $118.82 or $321.63 per aid sold. This is an increase of $45.44 (16.4%) over last year's figure of $276.19.

In summary, the cost of S.H.A.P.'s services increased approximately 16.4% over the previous year.

C. Financial Statements

Statement of Expenses and Reconciliation to Public Accounts by the Saskatchewan Hearing Aid Plan for the Year Ended March 31, 1979

Item	1978-79	1977-78
Contractual Services	$ 18,010	$ 34,925
Depreciation	90,330	71,133
Freight and express	1,757	1,965
Mechanical, radio, supplies and parts	30,571	11,665
Communications	11,408	12,104
Professional and technical services	3,133	3,336
Publicity, information, advertising and printing	16,256	10,834
Rents, insurance and utility services	517	744
Repairs and maintenance	2,551	4,749
Salaries	530,274	457,869
Scientific and educational supplies	5,629	2,619
Stationery and office supplies	4,269	4,713
Travel, sustenance and vehicle expenses	50,633	51,551
Total	$ 765,338	$ 668,207

Reconciliation to Public Accounts

Expenses — Purchases	$ 367,882	$ 344,412
Expenses per expenditure statement	765,338	688,207
Purchase of fixed assets	76,396	93,152
	$ 1,209,616	$ 1,105,771
Less depreciation expense	90,330	71,133
	$ 1,119,286	$ 1,034,638
Less increase in accounts payable	19,438	943
Total Expenditures	$ 1,099,848	$ 1,035,581

Taken from the 1978-79 and 1977-78 financial statements prepared by the Saskatchewan Hearing Aid Plan. The statements are prepared on an accrual basis which takes into consideration accounts receivable, accounts payable and depreciation.

Calculation of Cost Per Service and Hearing Aid Sold

		1978-79	1977-78
I.	**Time Required to Provide Each Service**		
	Audiological evaluations (A.E.) normally take 1 hour. A time unit is equal to 1 hour		
	6,126 clients received A.E. in 1978-79	6,126 units	5,606 units
	Hearing aid evaluation and follow-ups (H.A.E.F.) takes approximately 2 hours or 2 time units		
	2,516 clients received H.A.E.F. in 1978-79	5,032 units	5,666 units
	Total time units for A.E. and H.A.E.F.	11,158 units	11,272 units
II.	**Overhead Expenses Attributable to A.E. and H.A.E. and Follow-up**		
	Clinic Space Provided by Department of Government Services	$ 72,825	$ 39,984
	Overhead per statement of expenses page 13	765,338	668,207
	Total Overhead	838,163	708,191
	Less: expenses attributable to accessory sales and repair (10%)	(83,816)	(70,819)
	Expenses attributable to A.E. and H.A.E.F.	$ 754,347	$ 637,372
III.	**Cost to Provide Each Service**		
	Audiological Evaluations (A.E.)		
	$754,347 x $\frac{6,126}{11,158}$ ÷ 6,126 = $67.60	$ 67.60	$ 56.54
	Hearing Aid evaluation and follow-up (H.A.E.F.)		
	$754,347 x $\frac{5,032}{11,158}$ ÷ 2,516 = $135.21	135.21	113.09
	Cost of A.E. and H.A.E.F.	$ 202.81	$ 169.63
IV.	**Average Charge to Patient Purchasing a Hearing Aid**		
	Revenue from hearing aid sales $255,576 ÷ Number of hearing aids sold 2,151	118.82	106.56
V.	**Total cost of Providing a Hearing Aid**	$ 321.63	$ 276.19

D. Statistical Tables

Table 1

Patients Seen by Age and Region of Residence

Region of Residence	Age of Patient 0-6	7-19	20-44	45-64	65-74	75+	Un-known	Total
Regina City	271	218	233	325	291	583		1,921
Regina Rural	59	74	51	133	159	368	1	845
Swift Current	13	34	25	57	106	197	1	433
Moose Jaw	94	121	55	119	135	370		894
Weyburn	34	59	40	100	128	234		595
Yorkton	44	95	65	133	177	315		829
Saskatoon City	55	125	144	198	203	431	1	1,157
Saskatoon Rural	7	39	29	65	74	113		327
Rosetown	14	35	29	65	65	156	1	365
Melfort	9	41	32	110	128	309	1	630
Prince Albert	20	37	48	73	101	187		466
North Battleford	19	70	35	93	135	194		546
Northern Sask.	14	110	43	50	11	3		231
In-Prov. (Unknown)	34	112	19	17	18	53	78	331
Out-Prov.	4	1	4	11	4	5	32	61
Totals	691	1,171	852	1,549	1,735	3,518	115	9,631

Table 2

Number of Services Rendered by Age of Patient and Region of Residence

Region of Residence	Age of Patient 0-6	7-19	20-44	45-64	65-74	75+	Un-known	Total
Regina City	374	394	562	945	842	1,607		4,724
Regina Rural	106	116	122	338	425	857	1	1,965
Swift Current	32	50	52	121	229	437	1	922
Moose Jaw	145	173	125	284	317	891		1,935
Weyburn	64	113	86	245	342	561		1,411
Yorkton	81	183	131	243	419	670		1,727
Saskatoon City	180	265	319	502	582	1,065	1	2,914
Saskatoon Rural	31	75	65	164	171	272		778
Rosetown	30	58	55	142	124	320	1	730
Melfort	24	69	62	209	231	559	1	1,155
Prince Albert	34	74	84	170	228	396		986
North Battleford	47	133	80	219	271	388		1,138
Northern Sask.	20	113	54	71	15	3		276
In-Prov. (Unknown)	47	121	23	34	29	72	105	431
Out-Prov.	5	1	6	20	8	14	37	91
Totals	1,220	1,938	1,826	3,707	4,233	8,112	147	21,183

Note: Services are defined to be: 1) Audiological Evaluation; 2) Hearing Aid Evaluation; 3) Counselling; 4) Refund Hearing Aid; 5) Major Repairs; 6) Issued Loaner; 7) Loaner Returned; 8) Sold Aid (No audiological or hearing aid evaluation); 9) Minor Services.

Table 3

Number of Services Rendered, by Age of Patient and Type of Service

Age Range	Audio Evals	H-Aid Evals	Type of Service: Scheduled Couns	Scheduled M-Rep	Scheduled M-Ser	Scheduled Loaner	Drop-ins Couns	Drop-ins M-Rep	Drop-ins M-Ser	Drop-ins Loaner	Total
0 - 6	792	28	8	2	2	15	10	47	235	81	1,220
7 - 19	974	96	11	3	2	23	13	132	493	191	1,938
20 - 44	548	171	28	0	14	30	19	129	594	293	1,826
45 - 64	912	470	129	2	63	45	27	315	1,178	566	3,707
65 - 74	992	639	222	4	65	31	67	320	1,378	515	4,233
75+	1,905	1,110	381	6	135	62	176	609	2,624	1,104	8,112
Not Stated	3	2	1	0	0	0	3	16	101	21	147
Total	6,126	2,516	780	17	281	206	315	1,568	6,603	2,771	21,183

Audio Evals = Audiological Evaluations
H-Aid Evals = Hearing Aid Evaluations
Couns = Counselling
M-Rep = Major Repairs — aids requiring repair by S.H.A.P. repairmen or returned to the manufacturer
M-Ser = Minor Services — includes making new molds, modifying output or tone, making ear plugs, etc.
Loan = Loaners — includes both issued and returned aids

Table 4

Number of Services Rendered by Clinic and Type of Service

Location of Clinic	Audio Evals	H-Aid Evals	Type of Service: Scheduled Couns	Scheduled M-Rep	Scheduled M-Ser	Scheduled Loaner	Drop-ins Couns	Drop-ins M-Rep	Drop-ins M-Ser	Drop-ins Loaner	Total
Regina	2,028	781	254	3	107	87	167	810	2,473	1,589	8,299
Swift Current	210	126	43	—	24	11	12	45	181	47	699
Moose Jaw	484	163	77	5	42	33	15	57	286	83	1,245
Weyburn	214	127	76	1	26	7	8	36	103	51	649
Estevan	38	37	24	1	6	4	6	12	32	18	178
Yorkton	409	181	72	—	26	9	18	62	132	69	978
S. Nursing Homes	391	104	33	1	10	—	3	1	75	2	620
Saskatoon	1,084	609	91	—	3	45	62	474	2,750	725	5,843
Rosetown	40	7	—	—	1	—	—	5	36	3	92
Kindersley	43	13	5	—	—	—	—	2	25	5	93
Biggar	6	—	—	—	—	—	1	—	3	—	10
Melfort	160	72	24	—	4	2	4	36	80	59	441
Prince Albert	211	114	21	—	3	4	4	8	200	66	631
North Battleford	188	110	16	—	—	2	12	19	209	51	607
Lloydminster	44	7	4	6	12	1	1	1	12	1	89
La Ronge (North-Sask)	321	5	—	—	—	1	—	—	3	2	332
N. Nursing Homes	255	60	40	—	17	—	2	—	3	—	377
Total	6,126	2,516	780	17	281	206	315	1,568	6,603	2,771	21,183

Table 5

Hearing Problems found by Degree and Type of Loss

Type	Normal	Conductive	Sensorineural	Mixed	Unknown	Not Tested	Total
Degree							
Normal	2,106	398	174	14	36	49	2,777
Hi-Frequency	4	7	922	19	7	20	979
Mild	0	363	1,624	118	30	60	2,195
Moderate	0	139	2,052	242	40	81	2,554
Moderately Severe	0	49	1,229	253	39	53	1,623
Severe	0	6	527	250	65	52	900
Profound	0	5	421	110	80	69	685
Not Tested	6	6	0	0	28	499	539
Totals	2,116	973	6,949	1,006	325	883	12,252

Table 6

Hearing Aids Sold by Region of Residence and Age of Patient

	Age of Patient							
Region of Residence	0-6	7-19	20-44	45-64	65-74	75+	Unknown	Total
Regina City	7	13	41	77	66	140	—	344
Regina Rural	—	8	12	39	69	94	—	222
Swift Current	2	2	5	10	34	62	—	115
Moose Jaw	1	3	18	39	42	101	—	204
Weyburn	3	10	8	36	46	68	—	171
Yorkton	8	11	20	33	86	82	—	240
Saskatoon City	3	17	23	47	60	95	—	245
Saskatoon Rural	—	3	5	14	22	34	—	78
Rosetown	—	3	4	16	14	36	—	73
Melfort	2	7	9	31	35	62	—	146
Prince Albert	—	8	6	23	34	51	1	123
North Battleford	6	11	11	30	40	37	—	135
Northern Sask.	—	3	6	10	3	—	—	22
In-Prov. (Unknown)	1	3	1	8	4	7	(-2)*	22
Out-Prov.	—	—	2	5	3	1	—	11
Total	33	102	171	418	558	870	(-1)*	2,151

*Minus figure indicates hearing aid refunds exceeded hearing aids sold for the age-unknown category. This is a result of refunds for aids which were sold in the previous fiscal year.

Table 7

Hearing Aids Sold by Clinic and Age

Clinic	Age of Patient 0-6	7-19	20-44	45-64	65-74	75+	Un-known	Total
Regina	15	23	68	156	166	248	(-3)*	673
Swift Current	—	3	8	9	35	59	—	114
Moose Jaw	—	3	7	27	36	68	—	141
Weyburn	—	5	7	22	28	48	—	110
Estevan	—	2	1	3	11	10	—	27
Yorkton	4	7	13	25	61	60	1	171
S. Nursing Homes	—	—	—	1	6	46	—	53
Saskatoon	14	44	45	111	129	202	1	546
Rosetown	—	—	—	1	1	2	—	4
Kindersley	—	—	1	—	2	10	—	13
Biggar	—	—	—	—	—	—	—	—
Melfort	—	2	2	13	18	31	—	66
Prince Albert	—	7	10	21	29	31	—	98
North Battleford	—	5	7	24	30	31	—	97
Lloydminster	—	—	1	—	4	1	—	6
La Ronge (North-Sask)	—	1	—	4	—	—	—	5
N. Nursing Homes	—	—	1	1	2	23	—	27
Totals	33	102	171	418	558	870	(-1)*	2,151

Note: This report prints netted results (The entries represent the number of aids sold less the number of aids returned).

*Minus figure indicates hearing aid refunds exceeded hearing aids sold for the age-unknown category. This is a result of refunds for aids which were sold in the previous fiscal year.

Table 8

Aids Sold by Age of Patient and Type of Aid

Type	Ear Level	Glasses	Body	Cros	Iros	Bicros	Bone Con-duction	All in the ear	Type N.S.*	Total	Less Refund	Net Total
Age												
0 - 6	25	0	5	3	0	0	0	0	1	34	1	33
7 - 19	91	1	5	3	0	1	0	0	3	104	2	102
20 - 44	149	3	6	3	0	2	2	2	9	176	5	171
45 - 64	364	29	11	8	0	8	0	5	17	442	24	418
65 - 74	518	35	13	10	0	5	0	6	10	597	39	558
75+	825	49	63	5	0	7	3	2	20	974	104	870
Unknown	2	0	0	0	0	0	0	0	0	2	3	-1
Totals	1,974	117	103	32	0	23	5	15	60	2,329	178	2,151

*Includes all models of hearing aids infrequently sold by the Program.

VI. Glossary of Terms

Audiologist — A person with highly specialized training in the assessment and rehabilitation of persons with impaired hearing.

dB or Decibels — dB is the abbreviation for decibel. Because the range of sensitivity of the inner ear is so large (the loudest sound we can tolerate is millions of times more powerful than the softest we can hear), a scale based upon logarithms was devised. The scale runs approximately from the softest sound (about 0 dB) to 140 dB at the maximum. The reference point for the dB scale is arbitrary.

Audiogram — A graph recording the threshold of sensitivity of hearing measured at several discrete frequencies.

Earmold — A "plug type" device that is custom made to fit the individual ear. It serves the function of coupling the aid to the ear canal.

Auditory Trainers — Specialized system of amplification that allows wireless communication, by means of radio frequencies, between parent and child. This equipment is essential for pre-school hearing impaired children to develop speech and language to the optimum of their ability.

Audiological Evaluation — A battery of tests to determine a person's hearing acuity for various sounds and speech. The evaluation may include site of lesion tests to determine where the problem lies within the auditory system.

Hearing Aid Evaluation — A battery of tests designed to determine hearing aid performance and the benefit the patient could expect to receive by wearing the aid.

Hearing Aid — An electronic amplifying device to make sounds audible to the individual with a hearing loss.

Behind-the-Ear or Ear-Level Aid — Rests behind the ear and is fastened to the ear mold via a hook type connection over the top of the ear.

Body Aid — Usually worn in the pocket, it is connected to the ear mold via a wire. These aids tend to be the most powerful.

Eye-Glass Aid — Built into the temple pieces of eye-glasses.

In-the-Ear Aid — Fit in the ear canal and outer ear. This type is the least powerful and most prone to malfunctioning.

Bone Conductor Aid — Has a mechanical vibrator worn on the mastoid (bone behind the ear) which vibrates and stimulates the cochlea without the middle ear being involved.

Major Repairs — Repair of the electronic components of a hearing aid. Aids are usually repaired by the S.H.A.P. repairman, but in some special cases are returned to the manufacturer.

Minor Services — Repair to non-electronic components of a hearing aid and to auxiliary equipment (i.e. ear molds, tubing). These repairs are always completed at the S.H.A.P. clinics.

Normal Hearing — Thresholds better than the 25 dB at frequencies important for understanding speech.

Mild Loss — Thresholds greater than 25 dB and less than 40 dB at frequencies important for understanding speech.

Moderate Loss — Thresholds greater than 40 dB and less than 55 dB at frequencies important for understanding speech.

Moderate-Severe Loss — Thresholds greater than 55 dB and less than 70 dB at frequencies important for understanding speech.

Severe Loss — Thresholds greater than 70 dB but less than 90 dB at frequencies important for understanding speech.

Profound Loss — Thresholds greater than 90 dB at frequencies important for understanding speech.

Conductive Loss — A hearing loss due to a problem in the system that transfers sound from the environment to the inner ear. Problem can be in the outer ear, ear canal, or middle ear. Typical conductive lesions found in the middle ear are otitis media, otosclerosis, lesion of the tympanic membrane, and traumatic injury of the tiny bones of the middle ear. This type of loss is often responsive to medical or surgical treatment.

Sensorineural Hearing Loss — Is caused by damage within the cochlea or the acoustic nerve. It involves damage to the sensory cells and in most cases cannot be corrected medically. Typical losses of this type result from the aging process and noise exposure. Certain diseases, head trauma, toxic agents, etc. can also cause sensorineural loss.